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| <p>94-265924/33 A13 BADI 93.02.25<br/>         BASF AG *EP 612792-A1<br/>         93.02.25 93DE-4305697 (94.08.31) C08J 9/20, 9/00 // C08L<br/>         25/04<br/>         Expandable polystyrene bead polymer with low internal water content - by suspension polymerisation of styrene in presence of polyethylene wax and dimeric alpha-methylstyrene, with addn. of blowing agent, etc. (Ger)<br/>         C94-121601 R(AT BE DE ES FR GB IT NL)</p>   | <p>A(4-C1A, 4-C5, 4-G2E, 8-B1, 8-M10, 8-S6, 10-B5, 12-P1, 12-R6, 12-S1A, 12-S4A3)<br/>         of expandable PS bead polymer with a reduced internal water content (e.g. 0.3-0.5 wt.%), requiring no expensive drying and conditioning treatment. The expandability of (I) is not adversely affected and may be improved; the stability of the suspension during polymerisation is also improved, and the prod. gives homogeneous, fine-celled foam.<br/> <b>PREFERRED COMPOSITION</b><br/>         (I) contains 0.01-1 wt.% PE wax with <math>M_n</math> 2000-6000 and 0.01-0.5 wt.% DMS.</p>   |
| <p>Expandable styrene bead polymer (I) is claimed, contg. 0.005-1.5 wt.% polyethylene wax (PE wax) and 0.005-1 wt.% dimeric alpha-methylstyrene (DMS).<br/>         Also claimed is a process for the prodn. of (I) by (co) polymerisation of styrene in aq. suspension contg. the above amts. of PE wax and DMS, in the presence of suspension stabilisers and conventional catalysts and with addn. of blowing agent etc.<br/> <b>USE/ADVANTAGE</b><br/>         (I) is used for the prodn. of expanded polystyrene for use as thermal insulation and packaging material etc.<br/> <b>ADVANTAGE</b><br/>         The addn. of both PE wax and DMS enables the prodn.</p> | <p><b>EXAMPLE</b><br/>         A mixt. of 19.5 kg water, 19.5 g <math>Na_4P_2O_7</math>, 52.7 g <math>MgSO_4</math>, 17 g Luwax AF31 (RTM: PE wax; mol. wt. 3000), 10.2 g DMS, 17 kg styrene, 17 g dibenzoyl peroxide and 51g dicumyl peroxide was heated from 25 to 100°C in 2 hrs. and from 100 to 130 °C in 5 hrs., and kept for a further 3 hrs. at 130°C, with addn. of 478 g 10% aq. PVP soln. 55 mins. after the temp. reached 80°C and 1.3 kg pentane after a further 125 mins.<br/>         The prod. was dried in air, coated with 0.1 wt.% ethylene-bis-stearamide and sieved; the 1-2 mm fraction was then coated with 0.2 wt.% of a (90:10) mixt. of glycerol<br/>         EP-612792-A+</p> |

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| <p>monostearate and Silica FK 320 (RTM), to give beads (I) contg. 0.4 wt.% water. These were pre-expanded, stored for 12 hrs. and then expanded, with demoulding time = 140 secs.; the prod. had density, 11 g/l; cell count, 13/mm. (cf. 600 secs., 16 g/l and 5 cells/mm without PE wax and DMS; in this case the beads contained 0.6 wt.% water). (6pp 1712MBDwgNo0/0)<br/>         Addnl. Data: SCHERZER D, HAHN K, RIETHUES M, NAEGELE D, WITT M, HUSEMANN W<br/>         94.02.10 94EP-102044<br/>         SR:DE3347279 EP405325 EP409694</p> | <p>US equivalent - US 5585410<br/>         EP-612792-A</p> |
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